

RIC *RAK*FC 2011
ReportsAPQ-56 Improvement Program

(K)

April 24, 1957

SYSTEM

- All 1.17 Resolution Problem - STAT
No change since last report.
- XH-2 2.16 Recorder Cooling - STAT
XH-3
NAVY
Sufficient parts have been sent to Marietta, Georgia to effect installation of recorder cooling on Serial Number 02-XH-3 Recorder. Still awaiting parts from Model Shop to complete modification of remaining XH-2 recorders and cameras--estimated date for installation of this modification is 5/10. Drafting has started bringing all recorder drawings up to date to show the cooling modification.
- XH-2 4.11 R. F. High Voltage Power Supply STAT
XH-3
NAVY
The results of the temperature vs. output voltage tests are negative. The main reason for the 5% change of the output voltage as the temperature is changed from +25° C to +85° C is that the dissipation factor of the Stycast changes about 6 to 1 over this temperature range. The only materials that exhibits a fairly constant dissipation factor over a wide temperature range are the silicones or silicon fluids. The silicones have a much higher dissipation factor than styrene type materials; however, there is available in the plant a type of the DC-200 silicon fluid that has a low loss characteristic.
- Plans are made to use a Rexolite (a high temperature low loss styrene) sheet as the mold and fill the mold with a DC-200 silicon oil. The natural question is whether or not the sealing of the oil can be accomplished well enough to pass MIL specs. The chances of obtaining a satisfactory seal looks good, on paper.
- All 6.17 P. E. Cell - STAT
Three P. E. Cell Test Sets are being built and tested to establish the sensitivity of P. E. Cells. All sets have been built.
- During calibration procedure, it was found that the internal voltage regulator had to be located external due to heating in the test set. This will allow the tubes to operate at almost ambient temperature. These external regulators are 75% completed.
- All 12.17 Pulse Cable Connectors - STAT
The existing pulse cable connectors will be modified to permit pressurization of the connectors on the R.F. Head end of pulse cable. The modification will consist of drilling an air hole in male connector on R.F. Head and a change in the method of assembly of pulse cable to its connector. The above is a quick-fix modification.

Time 13.17 AGC - Friedmann, () STAT
 Shared

Design a new AGC that will be less susceptible to radio-frequency interference and stray audio pick-up.

Drafting is working on the chassis assembly drawing.

A sheet of special shielding material has been ordered from the Perfection Mica Company. Several shields for the coils will be made here and checked on the new AGC.

No other work was performed on the AGC itself due to lack of facilities in Production and to time spent on ordering and designing information for the new photocell clamps and cables.

Time 17.13 Wide Band Receiver - () STAT
 Shared

No change since last report.

All 19.13 Receiver Design () STAT

Progress reported--report will be forthcoming next week.

All 20.10 Pulse Width - () STAT

Same as last report.

All 21.11 Pulse Width (Quick Fix) () STAT

No change since last report.

All 22.9 Resolution Test Set () STAT

A means of measuring recorder resolution is needed in the field. Eight Resolution Test Sets are being built by S. R. for the Time Shared System using commercial type construction. More cabinets have been received. Construction was slow last week because of circuit changes and interference of other projects.

Time 24.3 Deflection Driver Drift - () STAT
 Shared
 XH-3
 NAVY

Reducing filament voltage from 6.3 volts to 5 volts on 6AU6 amplifier tubes shows improvement (approximately 50% reduction in drift). The same reduction in voltage on the 4X250B output tubes does not show appreciable improvement.

Adding 150 ohm resistors in series with grids No. 1 on the two output tubes and in series with screen grids on 6AU6 tubes as parasitic oscillation suppressors does not appear to show any improvement.

Further checks are being made on filament voltage reduction.

| S Y S T E M S | | TIME SCHEDULE | | | | | | | | | | | | REMARKS | | | | | | | | | | | |
|---------------|----------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ITEM NO. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| DESCRIPTION | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Recorder Cooler | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 2 | Camera Cooling | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 3 | Camera Servo Motors | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 4 | Frame Alignment | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 5 | Recorder 10 W Power Supply | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 6 | Power Supply Fuse | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 7 | Provide for Rear Antenna | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 8 | Control Panel to Prevent | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 9 | Synthesizer - Replace | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 10 | Clutch in Alt. Servo | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 11 | Reconnect 100 V Supply | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 12 | Magic Seal | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 13 | Art. System | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 14 | Adjust Angle of Pod | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 15 | Ground Range Sweep | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 16 | And Clamping Circuit | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 17 | Cabling & Access | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 18 | ADC Clamp Video Amp | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 19 | Name Plates | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 20 | Replace Transistor | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 21 | Mount in Keyboard | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 22 | Transfer Circuit | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 23 | (Overhead at Turn-On) | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |
| 24 | Restorer R.P. Head | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 | W/8 |